



Self-guided tour

Conservation



**A teacher-led, curriculum-aligned resource
with guided student activities**

Key Questions



What does conservation mean?



Why do we need to protect marine animals?



Why are some animals endangered and others are not?



How are humans negatively and positively affecting animal habitats?



What steps can we take to help to support and save endangered species?



Vocabulary

Ecosystem

A community of plants, animals, and non-living things that interact with each other in one place.

Conservation

To maintain and protect something where possible, to enhance or increase quality or numbers.

Endangered

Any type of plant or animal that is in danger of disappearing forever.

Extinct:

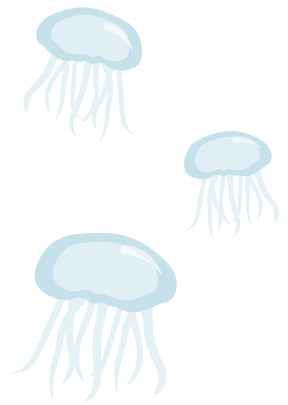
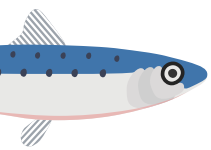
When an entire species or type of animal dies out.

Habitat

A natural environment or home of an animal or plant.

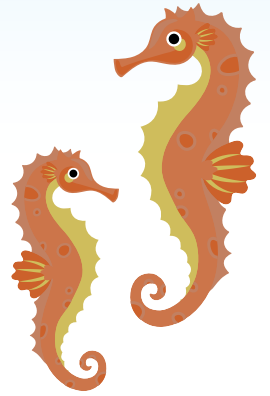
Recycling

Collecting and using old materials to make new things instead of throwing them away.



Pre-Visit Activities

Lower Primary



Resources supplied at the end of this booklet

Activity 1.

Create a class word wall about marine animals and ocean habitats. Students can add words, drawings, photographs, labels, facts, or observations before and after their SEA LIFE visit.

Encourage students to use words from the word wall in their speaking, writing, discussions and inquiry activities.

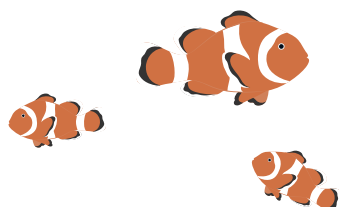
Teacher tip: Add new words as students discover them during their excursion. Some example words have been added on Page 29 of this booklet.

Activity 2.

Borrow books from the school library about marine animals and have students explore and read these to familiarise themselves with the topics. Students can bring books from home and share their interests and knowledge about the ocean.

Activity 3.

What can you do to look after the environment? Ask students to split an A4 paper into two, illustrating what different actions can be taken at school and at home e.g. not picking flowers, turning off the tap, whole-school clean-ups etc.



Pre-Visit Activities

Upper Primary

Activity 1.

What animal are you most interested in learning about? Draw your animal (see example) and all the things it needs to survive and how it lives in its habitat. Think of adaptations it may have to survive.

Activity 2.

Prior to your visit, watch the Marine Stewardship Council (MSC) video on ocean sustainability. Discuss what 'ocean sustainability' means and why oceans are threatened. Watch the video for a second time and ask students to take notes and recall facts.

Video: <https://www.msc.org/for-teachers/teach-learn-about-ocean-sustainability>

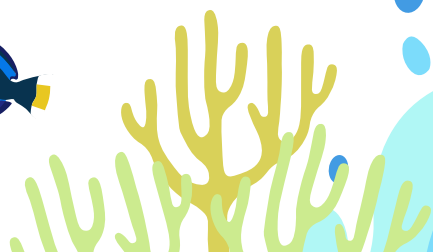
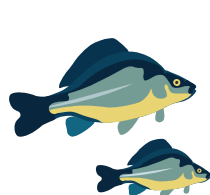
Activity 3.

Learn about marine conservation and explore the Marine Conservation website to find more information on sustainable seafood, plastic pollution and a variety of different topics.

Link: <https://www.marineconservation.org.au/campaigns/>

Activity 4.

Test your knowledge about sharks! Take our 'Fact or Fiction' quiz to find out how much you know about sharks before you visit SEA LIFE.



SEA LIFE Fact Tour Guide

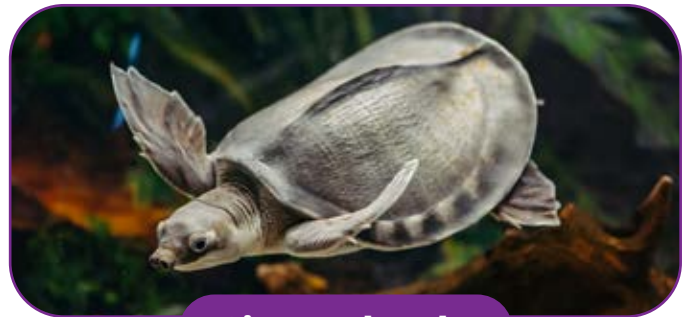
Use this SEA LIFE Fact Tour Guide to help you guide your students learning through SEA LIFE Sydney Aquarium! For each themed zone within the aquarium, we have highlighted key creatures you should point out to the students, plus provided you with some unique facts that only our keepers know about our amazing animals!

Zone: South Coast Shipwreck

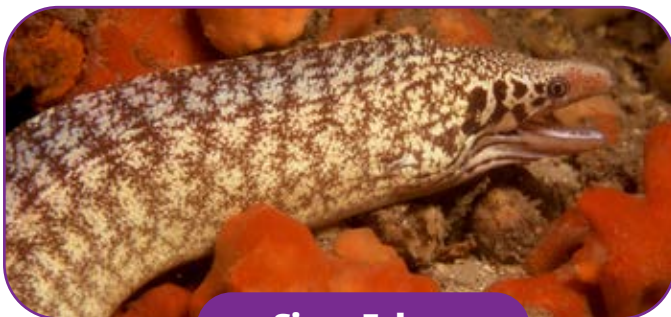
Key creatures to look for in this habitat!



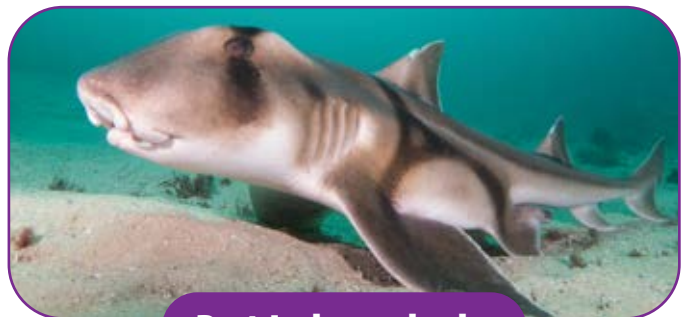
Little penguins



Pig-nosed turtle



Sieve Eel



Port Jackson sharks

How this ecosystem works

This area is a temperate environment – temperate climates are generally defined as **environments** with moderate rainfall spread across the year or portion of the year with sporadic drought, mild to warm summers and cool to cold winters. Little penguins live in temperate seas with temperatures between 13 and 20 degrees and within this region, the little penguin feeds mainly in inshore waters around the coast. The penguins usually nest in burrows where they set up colonies in sand dune vegetation but can also be found amongst rocks and sea caves. The ocean is the little penguin's natural environment. Their wings help them 'fly' under the water. They generally spend their day swimming while they return to the shore after dark.

The Port Jackson shark is bottom-dwelling and is found in the temperate water off of the southern half of Australia. They are found both close to shore and off the shelf in waters as deep as 275 metres.

‘Did you know’ facts about this habitat

What’s so special about penguin feathers?

Their blue/black feathers on their backs blend into the colour of the ocean. So, when predators from above such as larger birds go in to capture their prey, it is the penguin’s fast movement and colouration that helps them escape. It’s the same camouflage idea with the white feathers on their underside. Larger predators from below, such as seals or sharks, see white feathers with a background of light from the sun above which aids the penguins’ escape and protects them from the cold.

Their feathers are essential to their survival, far beyond just providing colour. These penguins live in a climate much like ours, where they experience cold winters and hot summers. To adapt to these changing conditions, they rely on their feathers in several important ways.

At the base of their tail, they have a gland that produces oil. Using their beaks, they spread this oil throughout their feathers. This not only waterproofs them while they are in the water but also helps protect them from the elements when they are on land.

In the warmer summer months, they also adapt by moulting, or shedding, layers of their feathers. This process takes around three weeks. During this time, they cannot enter the water, as their skin becomes too sensitive and itchy. Because of this, they must build up enough fat reserves beforehand by catching and eating extra food, allowing them to fast until the moult is complete and they can return to the water.

How do sharks survive underwater?

Breathing:

Port Jackson sharks can eat and breathe at the same time, unlike many other shark species that must keep moving to force water over their gills. This ability means they can remain still on the ocean floor for long periods without needing to swim continuously for oxygen. This resting behaviour also helps them conserve energy and gives them a better chance to observe their surroundings and spot potential prey to catch and eat.

Zone: Jurassic Seas

Key creatures to look for in this habitat!



Black and white clownfish



Common Sydney octopus



Lungfish



White's Seahorse

Creature Feature In Focus

Common Sydney octopus

Adaptations

So many arms!

They use their eight suckered arms to creep about over rock surfaces in search of food. Marine biologists have recently stated that two of its eight limbs act more like legs helping it push off for swimming and walking on the seafloor. They can also taste with their suckers!

The power of regeneration

If a tentacle is lost, they can regenerate that limb.

Camouflage

The octopus can change the colour of its skin and shape. The Sydney Common octopus is often seen to imitate seaweed.

Sharp beak

Most of their food is hard to get to. They use this sharp beak to break through the exoskeleton (shell) of animals such as crabs, snails and mussels. They can inject venom that weakens its prey after using its rasp-like tongue to file holes within the hard-shell animals.

Brain cells EVERYWHERE!

These brain cells are mostly found in the tentacles, which makes them very intelligent creatures. They also have amazing eyesight.

Ink Sac

When they feel threatened, the octopus contracts the muscles around the sac, releasing a black substance. This adaptation is a defence mechanism used by the octopus to escape predators.

Very maternal

To prevent crabs and fish from eating its offspring, the female octopus will place rocks and shells in the entrance of the den where the eggs were laid.

Habitat

The Common Sydney Octopus is found on the intertidal rocky shores and in the ocean. It has been suggested are more commonly associated with rocky reef habitats during the breeding season but tend to spend a considerable portion of their life in the sandy habitats throughout subtropical eastern Australia and Northern New Zealand.

Creature Feature In Focus

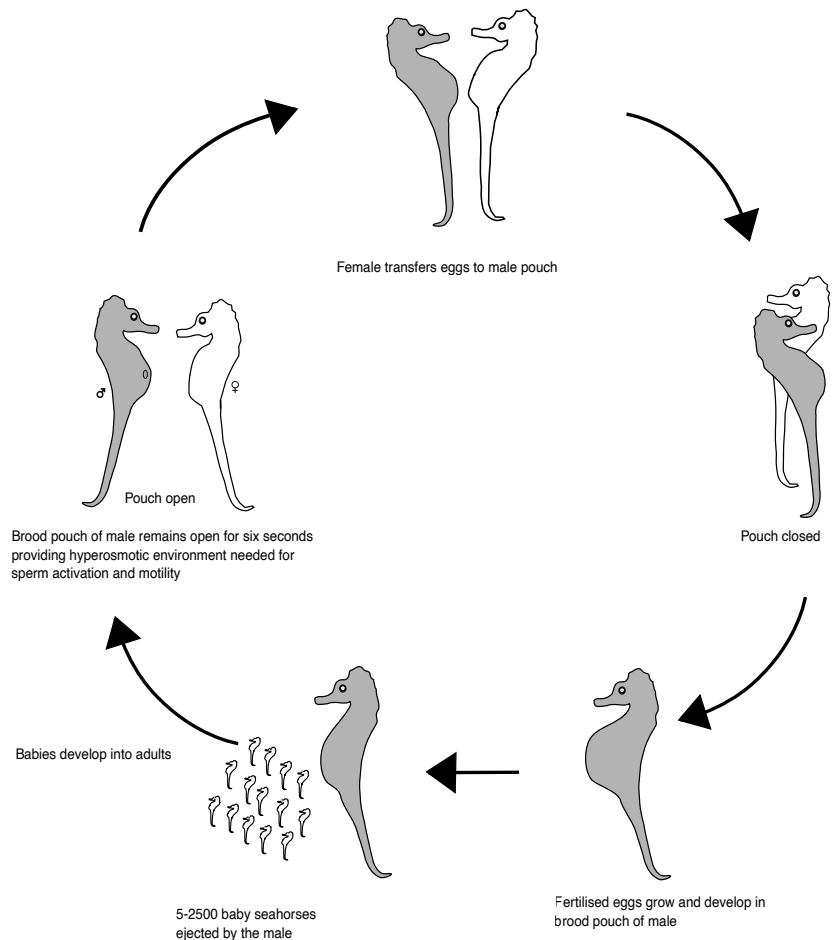
White's Seahorse

'Did you know' facts about this habitat

How does a seahorse have a baby?

Lifecycle

- A female seahorse lays dozens, sometimes hundreds, of eggs in a pouch on the male seahorse's abdomen. This is called the brood pouch.
- Depending on the seahorse species, the eggs remain in the brood pouch for up to 45 days, until the eggs are ready to hatch.
- The new baby seahorses find other baby seahorses and float together in small groups, clinging to each other using their tails.
- They need to find food and hide from predators as soon as they are born.



Conservation

Seahorse Case Study: why we need to protect them!

The primary cause for the decline in abundance of White's Seahorse is the loss of natural habitats across their range in eastern Australia. The seahorses occur within coastal estuaries and embayments, which are areas subject to population pressure. Within Port Stephens, over 90% of the soft coral and sponge habitats have declined at sites where the seahorse used to be abundant. Habitats in Port Stephens have been destroyed through the installation of boat moorings, boat anchors and the inundation of habitat by sand movement.

Within Sydney Harbour, population pressure has caused their natural habitats to decline and, as a result, the species is now predominantly found on man-made swimming nets within the harbour. These nets are periodically cleaned to remove the marine growth and repair the structural integrity of the nets which can lead to further displacement of seahorses and cause populations to dramatically decline. DPI Fisheries has been working with councils to develop practices which avoid damage to seahorses during net cleaning and repair.

Zone: Conservation Quay

In this zone, check out our Pygmy Perch recovery project

This is where our curatorial team are working to recover this amazing species of fish.

Key creatures to look for in this habitat!



Southern Pygmy Perch

Did you know the Pygmy Perch is an endangered species?

A recovery project to help save a small but mighty endangered species

Following a dramatic decline in numbers over the past two decades, the Southern Pygmy Perch - a small species of native, freshwater fish - is now listed as Endangered in New South Wales. The small but mighty Southern Pygmy Perch plays an important part in the ecosystem of freshwater streams and wetlands in South Eastern Australia, and to help drive the recovery of this species, SEA LIFE Sydney Aquarium is proud to launch a recovery program in collaboration with the NSW Department of Primary Industries (DPI) Fisheries.

The program aims to establish breeding populations of Southern Pygmy Perch at SEA LIFE Sydney Aquarium, then raise and release the fish into refuges, creating new populations and boosting the number and genetic diversity of existing populations of this species.

Zone: Rocky Shores Rockpool

Key creatures to look for in this habitat!



Chocolate Chip Sea Star



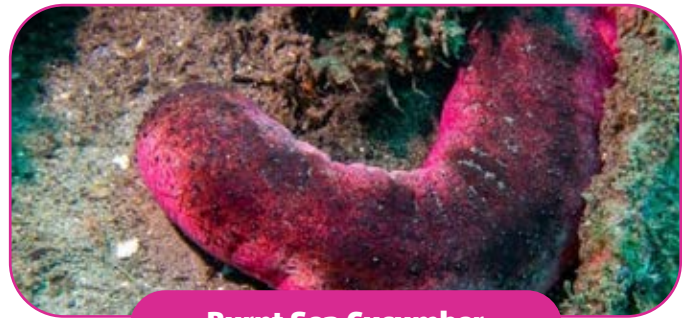
Shark egg



Sea urchin



Blue and Green Chromis



Burnt Sea Cucumber

How this ecosystem works

You'll find **tidal pools** in the intertidal zone, where land and sea meet. These **pools** usually form where there are areas of hard rock, and parts of the rock have eroded away to form depressions in the rock. At **high tide**, ocean water collects in these depressions. The tides of the ocean tend to change the physical characteristics of the pool and its surroundings.

There are several advantages to living in a tide pool ecosystem.

- Algae and other intertidal plants grow in the abundant sunlight and support an entire food chain of animals.
- Constant wave action supplies the tide pool with nutrients and oxygen.
- Food is abundant.
- There tends to be a lot of rocks, sand and plants which provide hiding places and surfaces to cling to.

Challenges

- Exposure to the sun. While this exposure can help grow algae, it can also dry up moisture and increase the water temperature.
- There is a lot of competition for space amongst the animals that live within a pool.
- As the tide rises and falls, the level of salt in the water (what we call salinity) constantly changes so the animals within this zone need to be well adapted to these extreme levels.
- There are a lot of waves in this zone which can risk animals being washed away. Most of the animals within this zone will have a great ability to stick to the rock walls of their habitat.

Zone: Sydney Harbour

Key creatures to look for in this habitat!



Lionfish



Slipper Lobster

Did you know?

Like many other crustaceans, the crayfish has a carapace or shield which projects backwards from the head and covers the thorax. There are two functions for their carapace – firstly, it protects the delicate feather-gills that come from the base of the legs, and it also provides a water channel that is a constant flow of oxygenated water to pass over the gills and enables the crayfish to breathe.

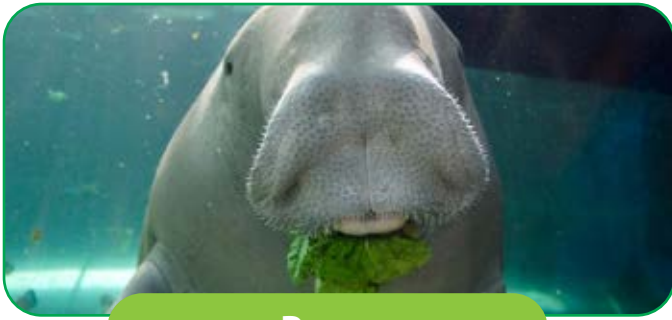
Creature Feature In Focus

Lionfish

Well known for its long venomous spines that resemble the mane of a lion, the lionfish is one of the most common aquarium fish species. Typically found along the seaward edge of reefs, lagoons and rocky surfaces to 50 metres deep, the red and white striped lionfish prey on small fish and invertebrates. Don't be fooled by the ornate beauty of the lionfish, as they are one of the most venomous fish in the world after the Estuarine stonefish!

Zone: Dugong Island

Key creatures to look for in this habitat!



Dugong



White spotted eagle ray

Creature Feature In Focus

White spotted eagle rays

Adaptations

Pointy snout

On occasion, spotted eagle rays will turn over rocks and even poke their heads into caves and other small rock openings in search for food.

Eyes

Their eyes are located on either side of their head and are useful for viewing immediate threats as well as prey.

Electroreception

Spotted eagle rays have jelly filled pores along their snout and jaw and around the eyes, creating a network that increases sensitivity to their awareness of prey while hunting. This adaptation means that eagle rays can detect the electrical and magnetic energy fields of prey even when they are buried deep in the sand.

Jaws and teeth

Once the eagle ray finds food, it sucks it into its mouth which has a strong jaw as well as broad, flat teeth that form a plate on the top and bottom. The lower jaw has 3-6 anterior teeth, which protrude beyond the upper tooth plate in order to crush shellfish when the mouth is closed. On the bottom and roof of their mouths spotted eagle rays also have a row of six or seven papillae, which remove shells from the prey before it is ingested. The hard parts of the prey, such as shells, are spat out and the soft parts are ingested.

Countershading

Spotted eagle rays get their name from the white circular pattern on their darkly coloured backs. The eagle ray has a counter shading effect that helps it to be disguised from predators. The dark patterned topside, when viewed by predators from above, camouflages into the reefs. When viewed from the ventral side, the light belly colour disappears into the ocean surface.

Flexible cartilaginous skeleton that live

Eagle rays to perform evasive manoeuvres when approached by predators such as sharp turns and sometimes even leaps out of the water if they are being chased.

Stinging barb

When predators are close, the spotted eagle ray's final line of defence is the venomous sting from the spines located behind their dorsal fin. There are usually between two and six of these small, barb-tipped spines, which are quite powerful when utilized.

Habitat

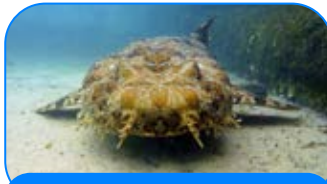
The Eagle Ray is a larger species of ray that lives in tropical and temperate oceans over the globe. They are a benthic-pelagic species, meaning that they are capable of living in the open water column, called the pelagic zone, and also the deepest area of the ocean, called the benthic zone. Due to this wide geographic range, the spotted eagle ray can be found in many habitats.

Zone: Shark Valley

Key creatures to look for in this habitat!



Grey nurse sharks



Wobbegongs



Port Jackson sharks



Smooth Ray



Fiddler Ray

Creature Feature In Focus

Grey nurse shark

Adaptations

BIG TEETH!

The teeth of a grey nurse shark are constantly being replaced. Older, damaged or blunt teeth on the exterior surfaces of the jaws are replaced with new teeth.

Electroreception

The underside of the Grey Nurse Shark's snout is dotted with pores. Each of these leads to an organ (Ampula of Lorenzini) which can detect electricity. Sharks can detect very weak electrical currents. This extra sense gives sharks the ability to detect and attack prey at close range without needing to see the prey item. This can be advantageous in murky water or if it is dark searching for food under the sand. The electroreception capabilities of sharks also give them the ability to navigate using the Earth's magnetic field.

Shape of body

Their bodies taper to points at both the snout and the tail, reducing water resistance.

Cartilage

Rather than bone, sharks have cartilage, which is much lighter and more flexible. In addition, their livers produce squalene, a fatty oil that helps them remain afloat.

Pectoral fins

Allow them to quickly change direction, diving and swimming upward.

Buoyancy

The grey nurse shark swallows air at the surface and holds it in the stomach. This provides buoyancy and enables the shark to hang almost motionless above the bottom.

Countershading

Grey nurse sharks are counter-shaded, the dorsal (upper) part is dark, mostly a grey to bronzy colour whereas the ventral (lower) part of the body is pale. Many fish that swim in open water are counter-shaded. This adaptation results in the fish being difficult to see from above, because the dark colour of the dorsal surface of the fish blends into the dark colour of the water below. It also helps to make the fish less visible from below, because the light colour of the underside of the fish is less noticeable against the light shining from above.

Habitat

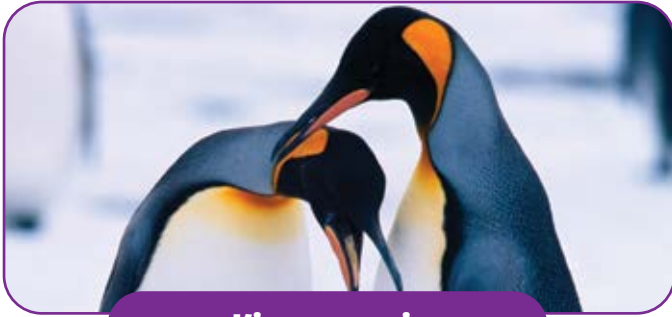
The grey nurse shark lives in shallow coastal water from the surf zone down to 60 metres. During the day they like to spend time in the vicinity of drop-offs, caves and ledges.

Lifecycle

Grey nurse sharks only breed once every two years. A pup is about one metre long at birth and will grow to between 2.2 metres and 3.6 metres, weighing in at up to 160 kilograms, as it reaches maturity.

Zone: Penguin Expedition

Key creatures to look for in this habitat!



King penguins



Gentoo penguins

How this ecosystem works

Colonies of king penguins will occupy beaches, and valleys.

Gentoo penguins choose shallow coastal areas for their breeding grounds, building nests among tufts of grass and rocky grounds. Their colonies spread across many of the sub-Antarctic islands as well as the Antarctic Peninsula.

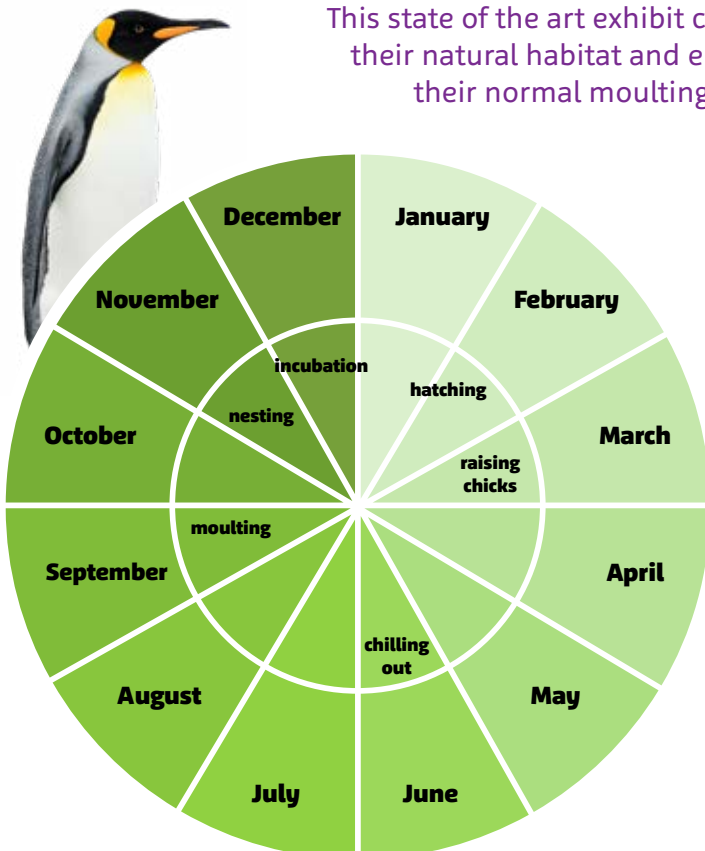
Why we need to save these species

Gentoo penguins: The sub-Antarctic populations of gentoo penguins are listed as Near Threatened. Currently it is thought that commercial fishing practices may be responsible for the falling population due to competition over food. The king penguin is of Least Concern. During the 19th and 20th centuries, king penguins were harvested for blubber, oil, eggs and feathers until a commercial hunting ban was put into place in 1969.

What are king penguins up to?

What are gentoo penguins up to?

This state of the art exhibit changes its lighting to mimic their natural habitat and ensure the penguins follow their normal moulting and breeding cycles.



Zone: Day and Night on the Reef

Key creatures to look for in this habitat!



Leopard Sharks



Blue Streak Cleaner Wrasse



Foxface Rabbitfish



Hump Nose Unicorn Fish



Maori Wrasse



Clown Triggerfish



Threadfin Butterfly Fish



Sabre Squirrelfish



Honeycomb Ray (Manuka)



Green Sea Turtle



Flatback Turtles



Queensland Grouper (Beau)



Black Tip Reef Sharks

Zone: Day and Night on the Reef

Creature Feature In Focus

Zebra Shark

Adaptations

Body

These sharks are born with stripes on their body (just like a zebra) to mimic the patterns of a poisonous sea snake to deter any predators whilst they are young. As the zebra shark gets bigger their stripes turn into spots to camouflage with the sea floor (just like a leopard).

Diet

They are oviparous (egg-laying) sharks. Females can lay 30-80 eggs during the 3-month breeding period.

Mouth

Zebra sharks have mouths on the underside of their heads to allow them to feed on bottom-dwelling organisms, such as crustaceans, mollusks, and fish.

Conservation

Zebra Sharks are endangered, meaning there aren't as many of them in the wild as there used to be. Here at SEA LIFE Sydney Aquarium we are a part of a breeding program called StAR Project. We provided viable eggs to the StAR hatcheries in Raja Ampat in Indonesia, to increase the wild population diversity.

Creature Feature in Focus

Green sea turtle

Adaptations

Sharp beak

Turtles have no teeth, their jaws are powerful and shaped like a bird's beak which helps them eat hard-shelled animals as well as their main diet of sea grass.

Forelimbs

Their forelimbs are modified into long, paddle-like flippers for swimming. This allows the green turtle to maintain its speed whilst travelling in the ocean. The cruising speed for green sea turtles is about 1.5 to 9.3 km per hour.

Body shape

Turtles are hydrodynamic, meaning their bodies are shaped to minimise drag and resistance when travelling through the water.

Lungs

Turtles have more than one lung located on the top of their shells for breathing. They also have two sets of muscles for breathing. One set of muscles is responsible for stretching the body outward from the shell, which expands the body cavity of the turtle, allowing it to inhale. The other set draws the body inward to exhale. Sea turtles are cold-blooded reptiles, meaning their body temperature changes with the environment. This helps them stay under the water. The green sea turtle can be submerged for up to 5 hours! Check out the turtles within the Day and Night on the Reef exhibit - do you see any sleeping turtles? When they are in this state, they need to use as little oxygen as possible. Their heart rate gets very slow. Eventually all sea turtles must come up to the surface to get air to breathe.

Zone: Day and Night on the Reef

How can we protect this ecosystem?

Like all ocean habitats, coral reefs are extremely vulnerable to human activity. Even if you don't live near tropical reefs, you can still make everyday choices that help preserve this vital habitat.

Use reef-safe sunblock

Chemical-based sunscreens can harm marine life. Use mineral-based sunblock when swimming, snorkelling, boating or diving. Check ingredient lists and avoid sunscreens that contain oxybenzone and octinoxate — chemicals known to cause coral bleaching.

Look, but don't touch

Coral reefs are delicate environments. Keep your hands, fins and feet off the reef when snorkelling or diving in tropical waters. Avoid stirring up sediments on the tropical seafloor, which can smother corals living nearby.

Don't buy coral souvenirs

Corals take thousands of years to form their intricate reefs. Yet reefs are destroyed in an instant to make souvenirs for tourists. Avoid buying jewellery and other products made from coral, seahorses and other reef animals. Take pictures instead!

Choose sustainable seafood

Coral reefs are home to 25 percent of all marine life, which makes them targets for commercial fisheries. Choose seafood that is responsibly caught. Visit [Seafood Watch](#) to learn more.



post-visit activities

Lower Primary

Read through '10 Steps to Save Our Seas' (see attached)
& take the pledge to help preserve marine life!

Resources supplied at the end of this booklet

Activity 1.

Check your lunchbox to see what items can be recycled, reused or composted. Can you improve this tomorrow? Who does it help when we reduce, reuse and recycle?

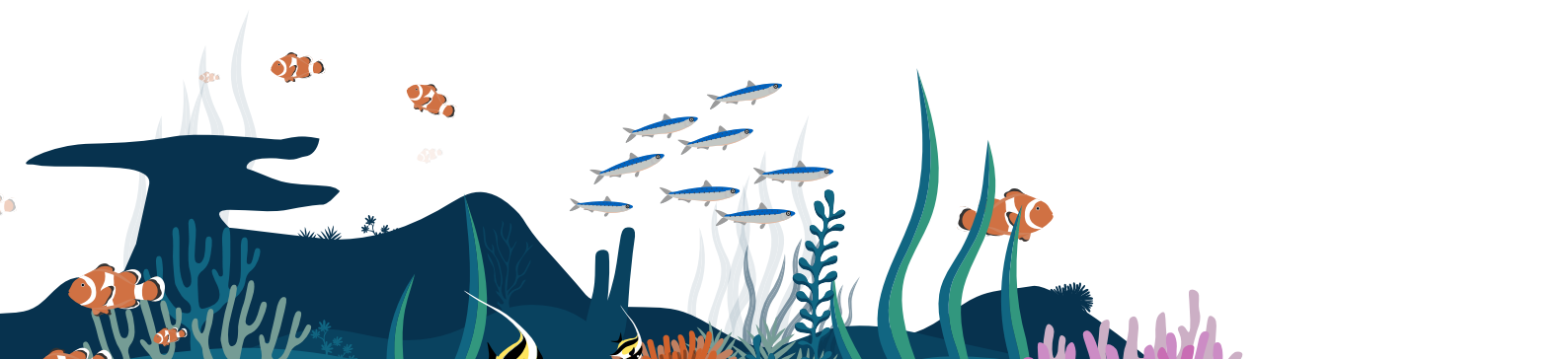
Activity 2.

Students are asked to place Australian marine animals on a map and learn about the animals in our backyard. Provide a map template and have students research different locations of where to find animals, if they are endangered and how many are predicted to be left.

Activity 3.

In small groups or as individuals, students read articles & ocean stories about sustainability on the WWF website. They are then asked to share a summary and the key facts from the article. This allows many issues to be explored and discussed.

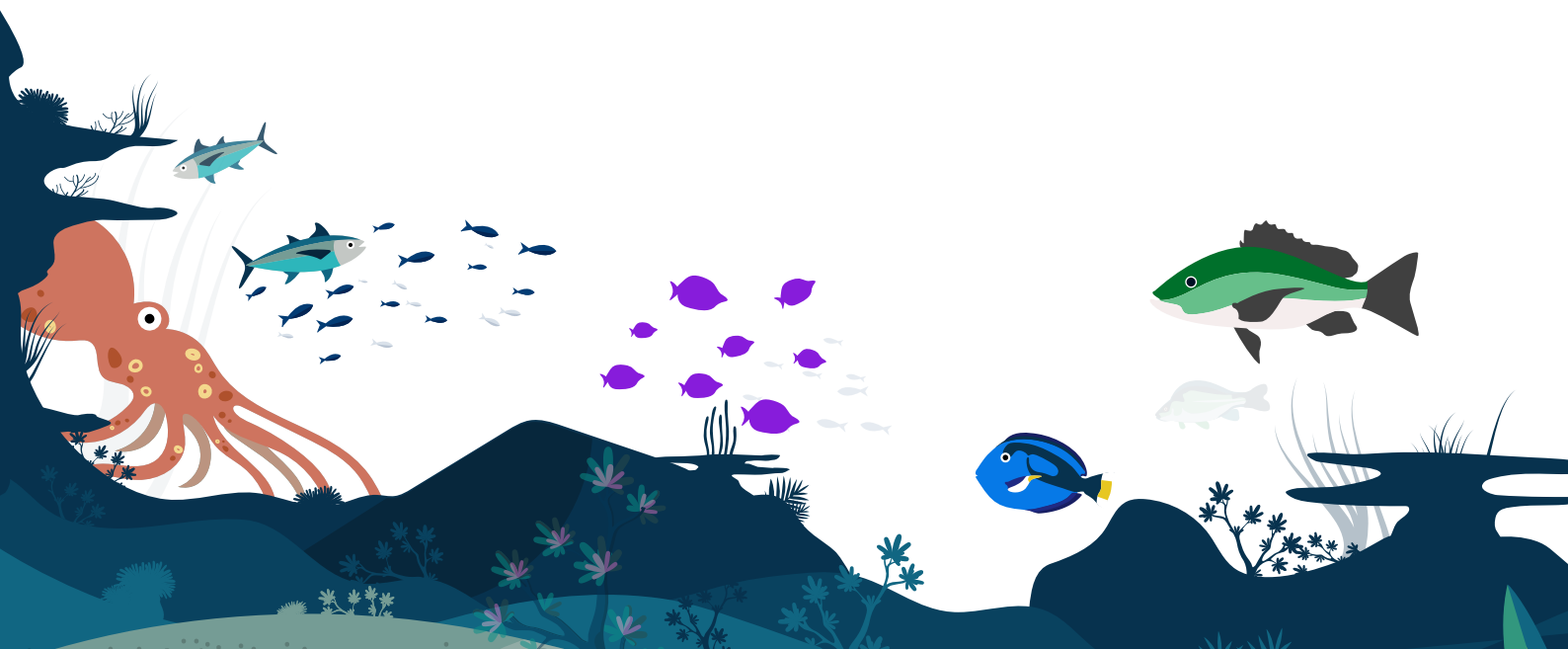
Link: https://www.worldwildlife.org/stories?initiative_id=oceans

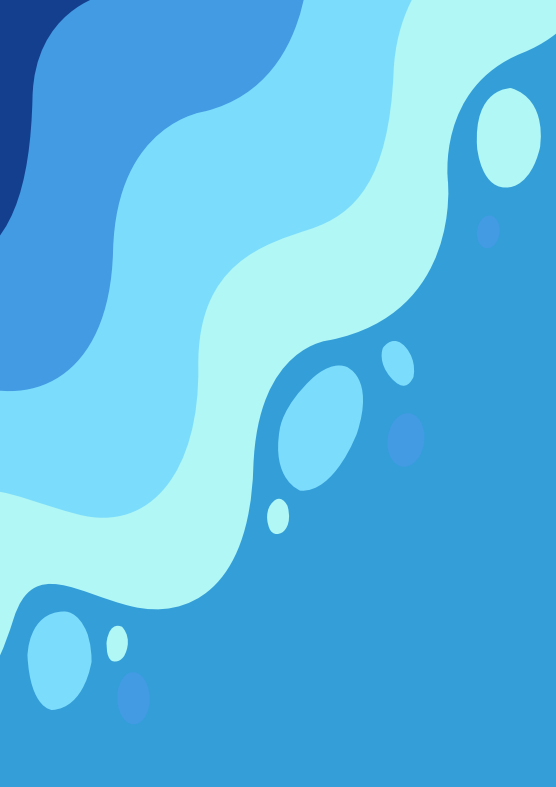


Curriculum links

These SEA LIFE self-guided resources packs can be used and adapted to meet the following K–6 NSW Science and Technology Syllabus.

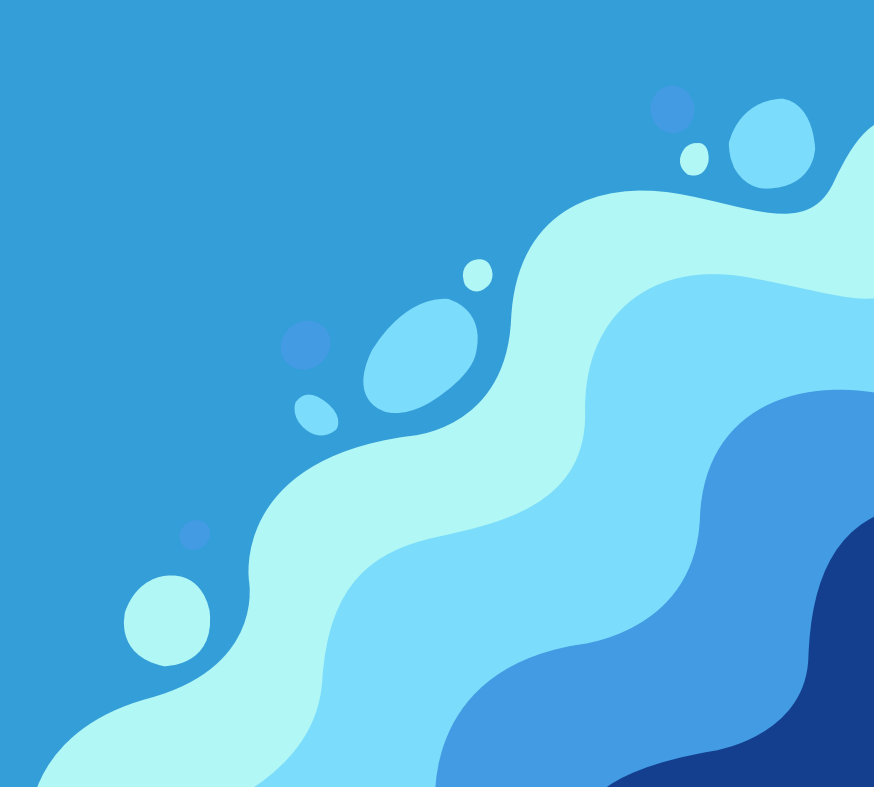
Early Stage 1	Stage 1	Stage 2	Stage 3
STe-3LW-ST explores the characteristics, needs and uses of living things	ST1-4LW-S describes observable features of living things and their environments	ST2-4LW-S compares features and characteristics of living and non-living things	ST3-4LW-S examines how the environment affects the growth, survival and adaptation of living things
STe-6ES-S identifies how daily and seasonal changes in the environment affect humans and other living things	ST1-5LW-T identifies how plants and animals are used for food and fibre products	ST2-5LW-T describes how agricultural processes are used to grow plants and raise animals for food, clothing and shelter	ST3-5LW-T explains how food and fibre are produced sustainably in managed environments for health and nutrition



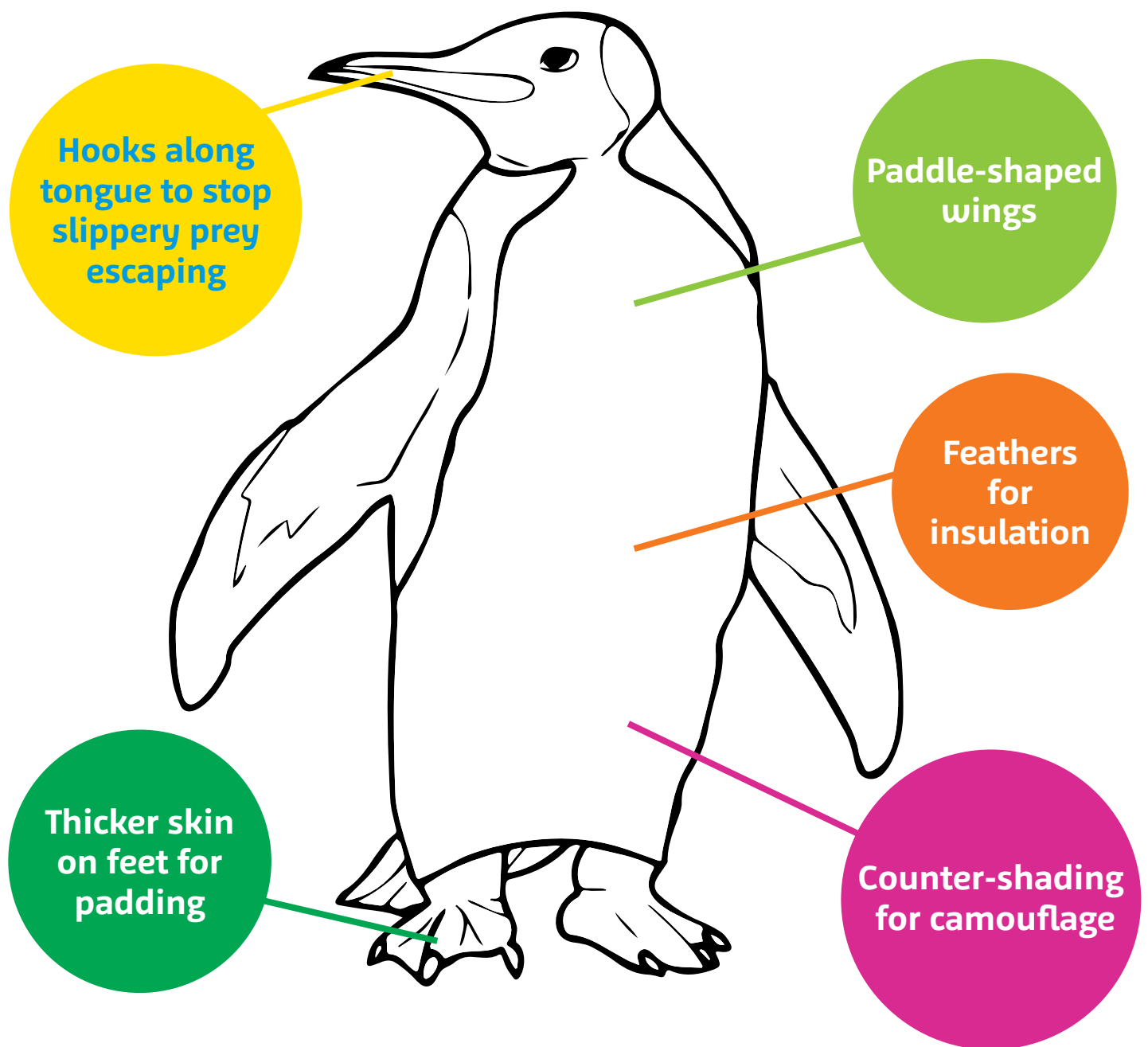


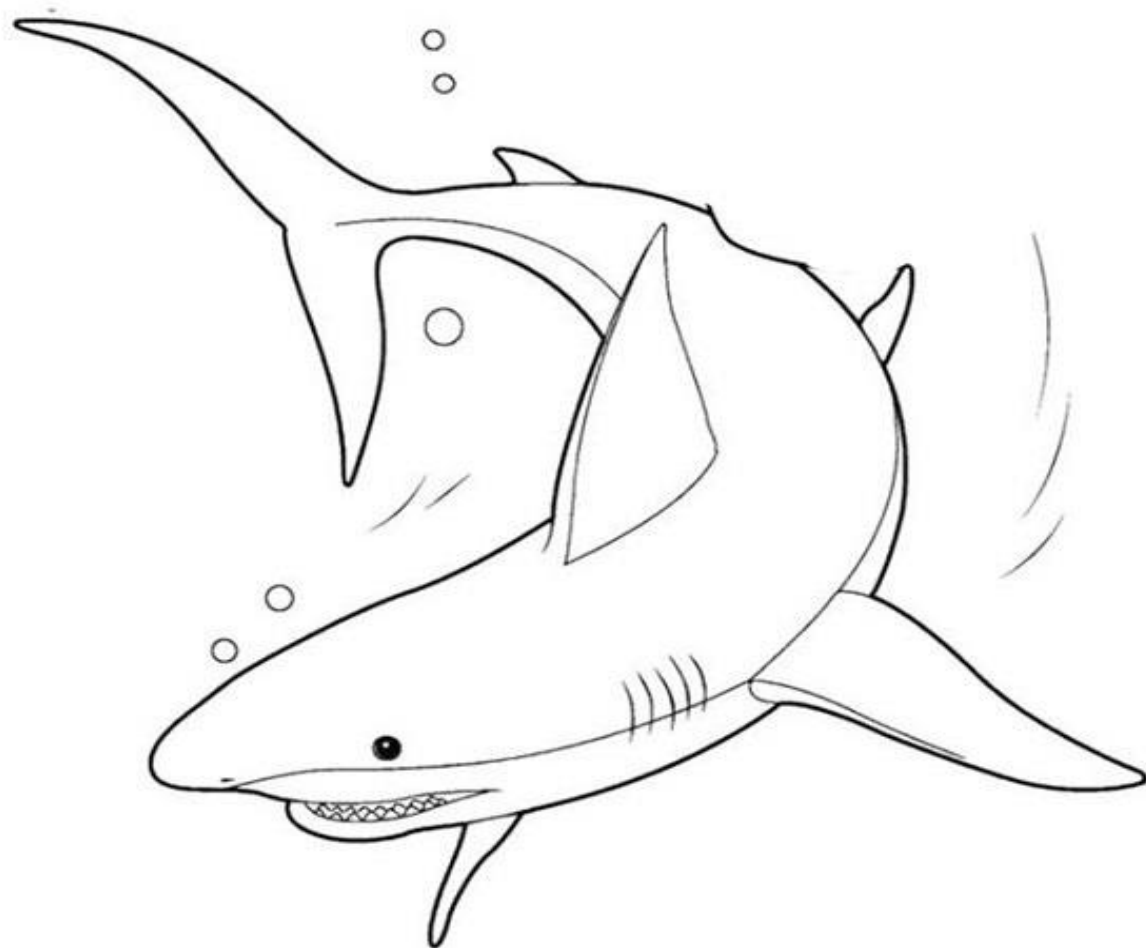
Resources

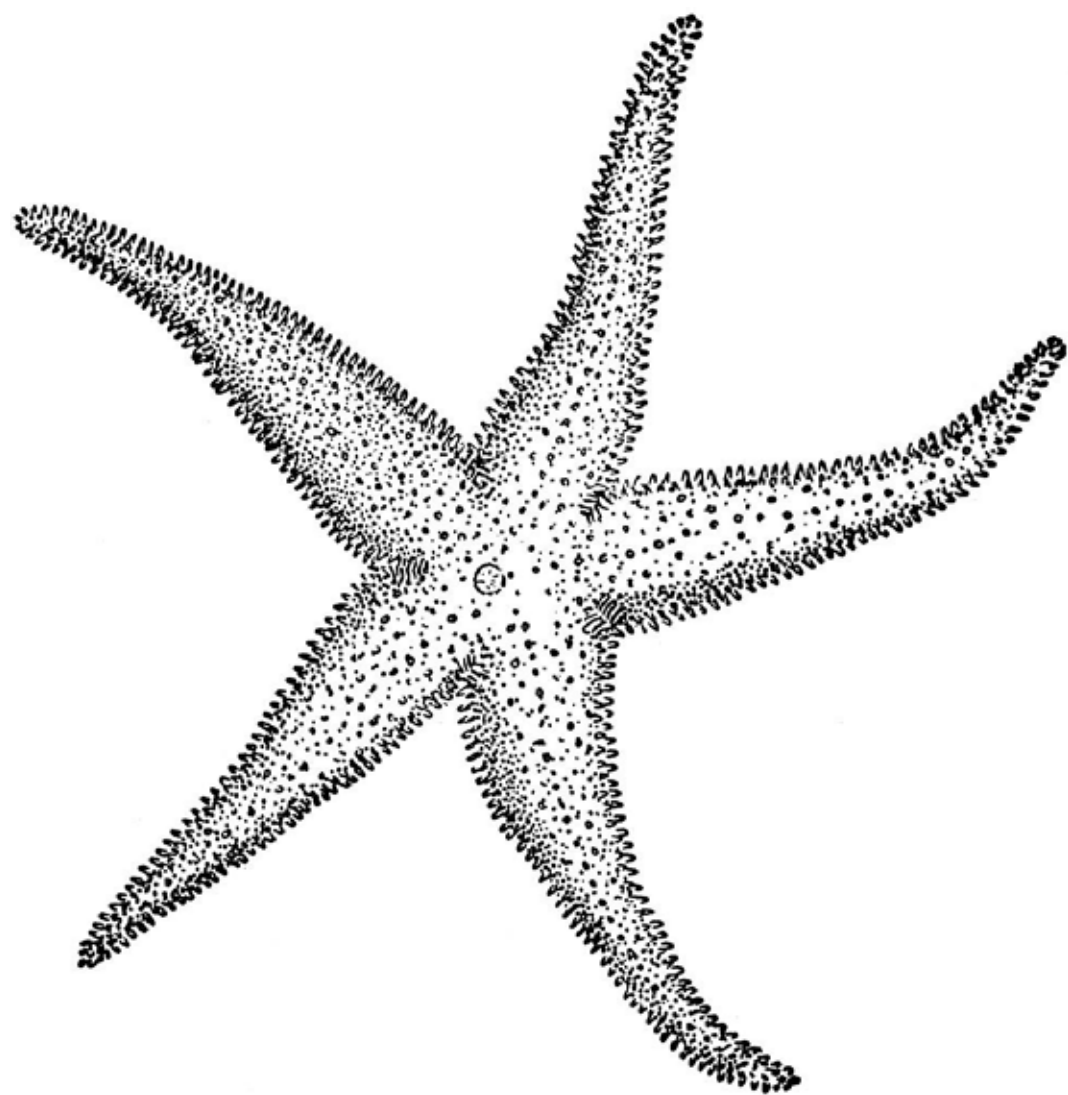
Pre-visit activities

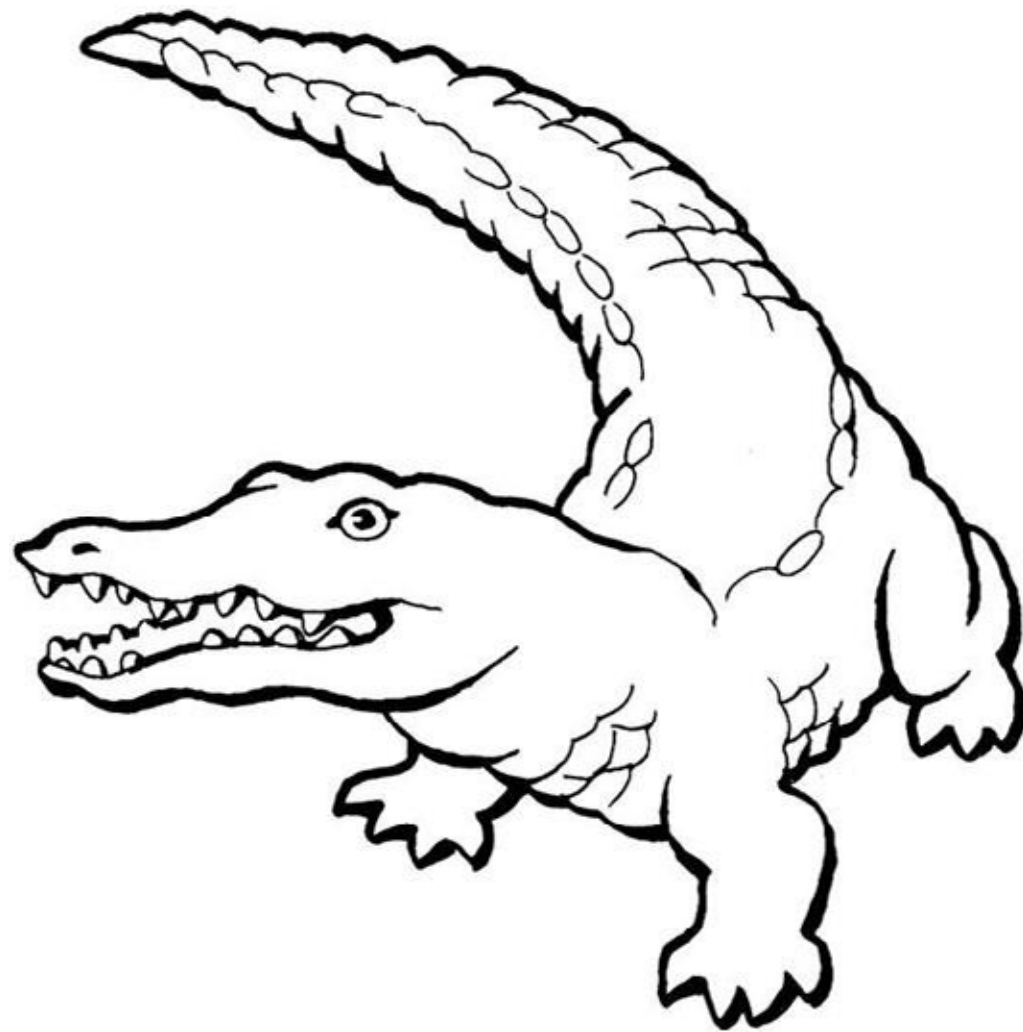


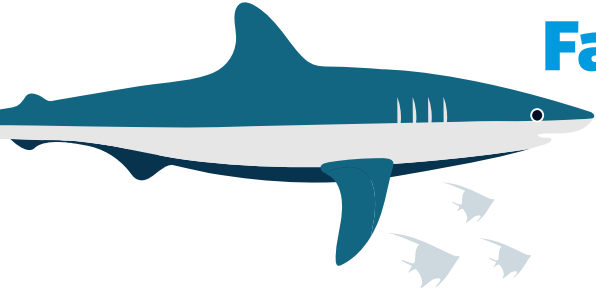
King Penguin adaptations





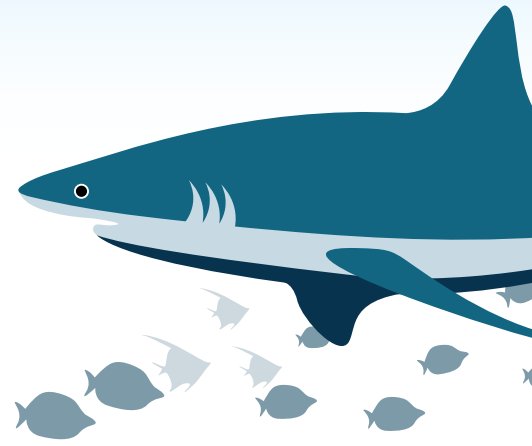




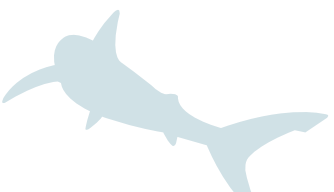


Sharks

Fact or Fiction?

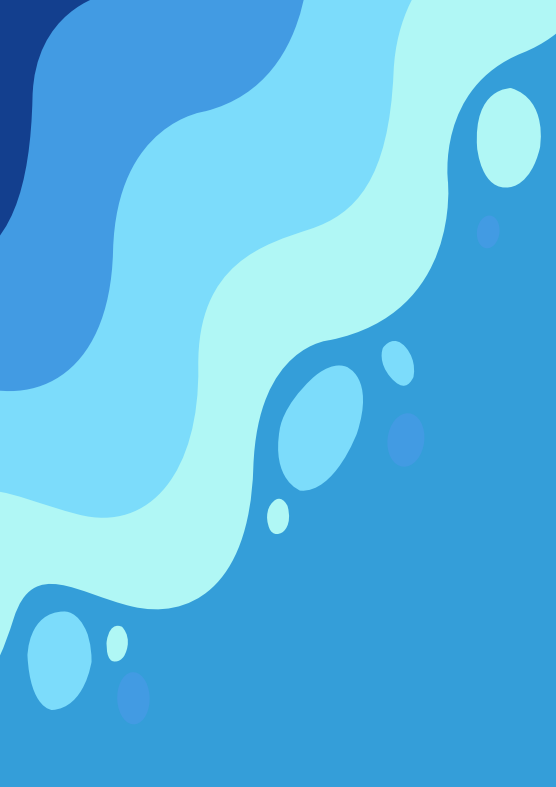


True/False

- | | |
|---|--|
| 1. All sharks are man-eaters. | |
| 2. All sharks are big with lots of sharp teeth. | |
| 3. Sharks are important for the ecosystem. | |
| 4. Sharks do not have any predators. | |
| 5. 50 million sharks are killed each year by people. | |
| 6. Hippos are more dangerous than sharks. | |
| 7. Sharks only live in saltwater. | |
| 8. Shark populations are increasing, and we need to control them. | |
| 9. All sharks need to keep moving or they will die. | |
| 10. There are 200 different species of sharks. | |
| 11. Great White Sharks can grow up to 6 metres. | |
| 12. If a shark fin is cut off, it will just grow back. | |
| 13. Sharks can lose thousands of teeth in their lifetime | |
| 14. Shark skin is covered in teeth. | |
| 15. All sharks lay eggs. | |
| 16. Some shark pups begin hunting before they are even born. | |
| 17. Sharks are only found in a few of the world's oceans. | |
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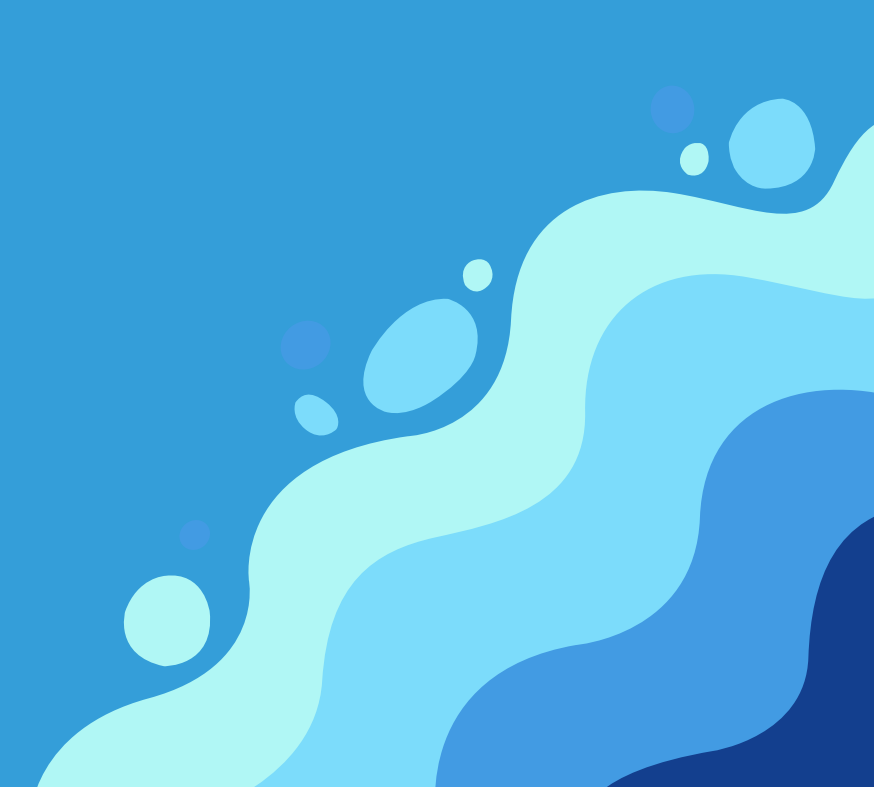
Fact or Fiction?

1. All sharks are man-eaters.	False	Most sharks are not dangerous to humans!
2. All sharks are big with lots of sharp teeth.	False	There are 400 different shark species and most sharks are smaller than your average human.
3. Sharks are important for the ecosystem.	True	Sharks play an extremely important role in the ecosystem by maintaining the food chain, keeping populations of other fish healthy and in proportion.
4. Sharks do not have any predators.	False	People pose the largest threat to sharks and are causing a lot of damage to shark populations.
5. 50 million sharks are killed each year by people.	False	More than 50 million sharks are killed each year, hunted for their fins, for meat and even some kinds of traditional medicine. Sharks are also caught up in nets (bycatch) so this number is likely to be much greater.
6. Hippos are more dangerous than sharks.	True	Hippos claim the lives of 2,900 people around the world each year compared to an average of six deaths due to shark attacks.
7. Sharks only live in saltwater.	False	Most sharks can only survive in saltwater, however some, like the Bull Shark, can live in both fresh and salt water.
8. Shark populations are increasing, and we need to control them.	False	Sharks are one of the most threatened groups of animals in the world and are crucial to healthy oceans.
9. All sharks need to keep moving or they will die.	False	It is true that sharks receive oxygen by having water pass over their gills, however only some species need to be continuously moving.
10. There are 200 different species of sharks.	False	There are 400 different shark species.
11. Great White Sharks can grow up to 6 metres.	True	On average, they grow to around 4.6m long, but some great whites have been measured at 6 metres - that's half the length of a bus!
12. If a shark's fin is cut off, it will just grow back.	False	Sharks cannot grow back fins that are cut off.
13. Shark can lose up to thousands of teeth in a lifetime.	True	Constantly growing and replacing teeth like a conveyor belt, sharks can grow and lose around 20,000 teeth in their lifetime.
14. Shark skin is covered in teeth.	True	These are called dermal denticles.
15. Sharks lay eggs.	False	Some large sharks have live births and others have eggs. These are often called a 'mermaid's purse'.
16. Some shark pups begin hunting before they are even born.	True	Some shark embryos cannibalise their siblings in the womb, with the largest embryo eating all but one of its siblings.
17. Sharks are only found in a few of the world's oceans.	False	Sharks are found in every ocean of the world.



Resources

Post-visit activities



Suggested Vocabulary for Activity 1: Building a Marine Word Wall

Marine Animals

- Shark
- Ray
- Turtle
- Penguin
- Seahorse
- Jellyfish
- Octopus
- Fish
- Seal
- Dugong

Habitats

- Ocean
- Reef
- Habitat
- Coral
- Seagrass
- Rock pool
- Mangrove
- Coast

Animal Features

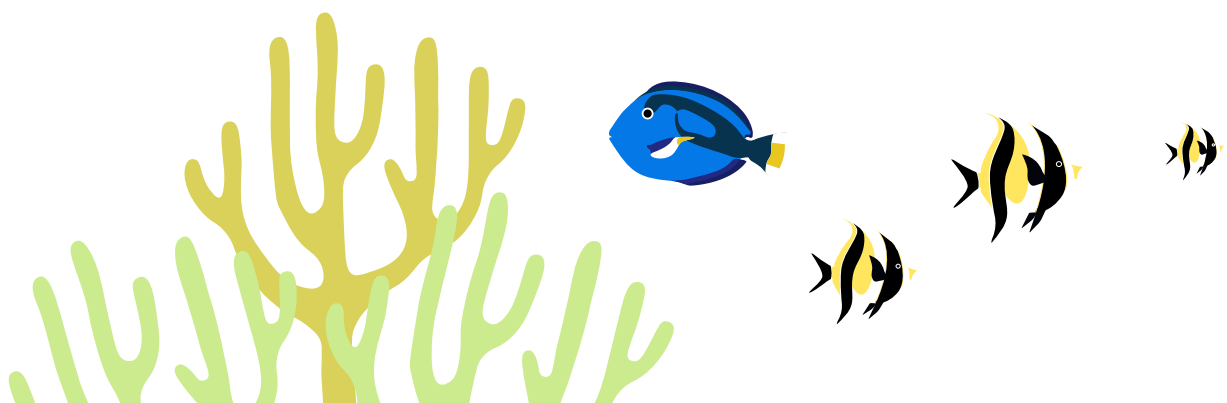
- Fins
- Flippers
- Gills
- Scales
- Tentacles
- Shell
- Beak

Life Processes

- Feed
- Hunt
- Grow
- Breathe
- Migrate
- Camouflage

Environmental Words

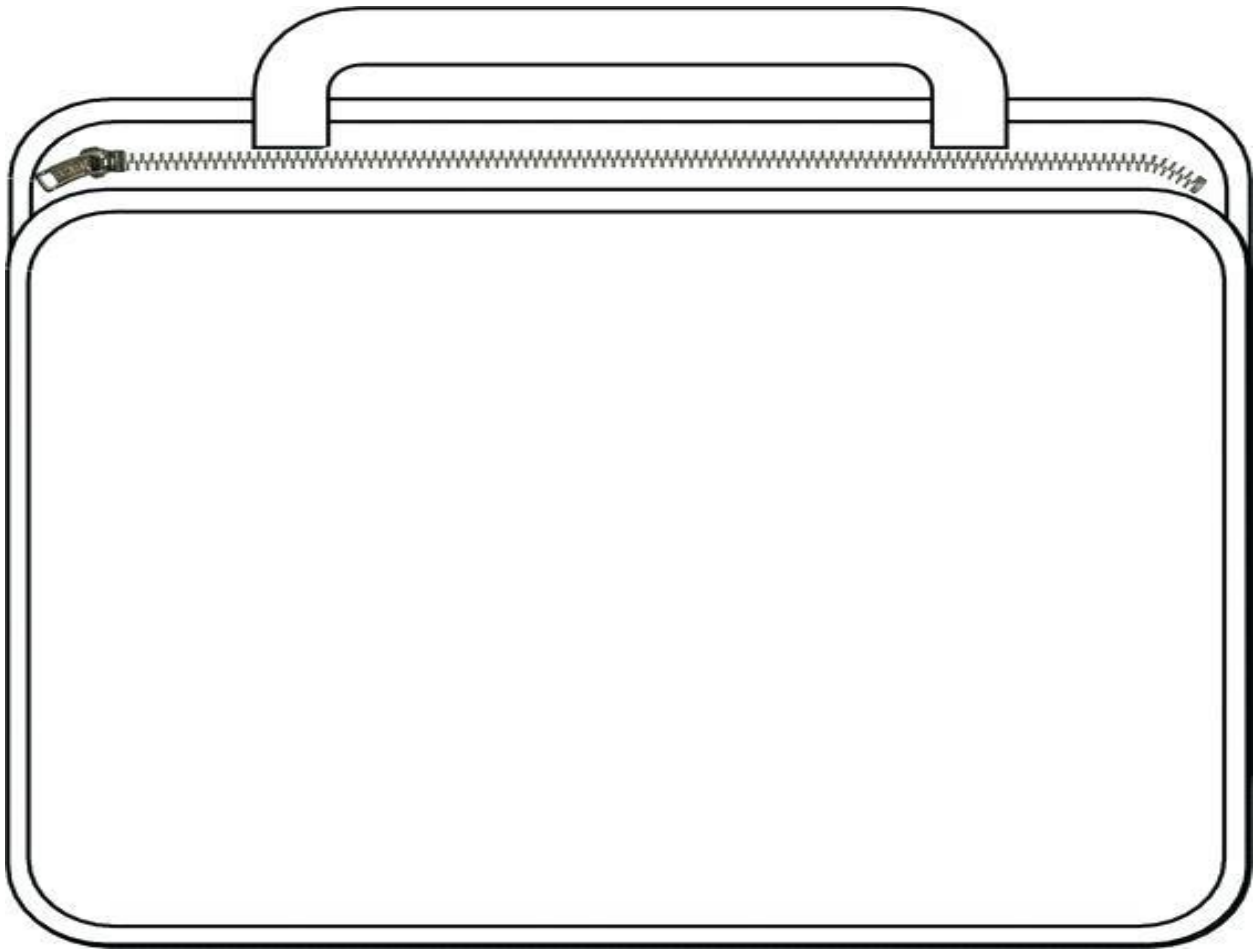
- Ecosystem
- Conservation
- Pollution
- Recycling
- Protect
- Sustainability
- Biodiversity







Lunchbox!



**Draw what you brought for snack and lunch today.
Are there any items that can be recycled, reused or composted?**

EPBC Act List of Threatened Fauna

Fishes that are Extinct in the wild (1 EPBC species)

Galaxias pedderensis	Pedder Galaxias	06-Jun-2005
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Fishes that are critically endangered (8 EPBC species)

Bidyanus bidyanus	Silver Perch, Bidyan	21-Dec-2013
Brachionichthys hirsutus	Spotted Handfish	11-Oct-2012
Carcharias taurus (east coast population)	Grey nurse shark (east coast population)	16-Oct-2001
Galaxias rostratus	Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow	05-May-2016
Galaxias truttaceus (Western Australian population)	Western Trout Minnow	18-Aug-2006
Glyphis glyphis	Speartooth Shark	16-Oct-2001
Stiphodon semoni	Opal Cling Goby	16-Feb-2011
Thumichthys politus	Red Handfish	11-Oct-2012

Fishes that are endangered (17 EPBC species)

Chlamydogobius micopterus	Elizabeth Springs Goby	16-Jul-2000
Craterocephalus fluviatilis	Murray Hardyhead	16-Mar-2012
Galaxias auratus	Golden Galaxias	06-Jun-2005
Galaxias fontanus	Swan Galaxias	16-Jul-2000
Galaxias fuscus	Barred Galaxias	16-Jul-2000
Galaxias johnstoni	Clarence Galaxias	16-Jul-2000
Galaxiella nigrostriata	Blackstriped Dwarf Galaxias, Black-stripe Minnow	11-May-2018
Glyphis garricki	Northern River Shark, New Guinea River Shark	16-Oct-2001
Maccullochella ikei	Clarence River Cod, Eastern Fresh Water Cod	16-Jul-2000
Maccullochella macquariensis	Trout Cod	16-Jul-2000
Maccullochella mariensis	Mary River Cod	16-Jul-2000
Macquaria australasica	Macquarie Perch	16-Jul-2000
Melanotaenia eachamensis	Lake Eacham Rainbowfish	16-Jul-2000
Nannoperca oxleyana	Oxleyan Pygmy Perch	16-Jul-2000
Paragalaxias mesotes	Arthurs Paragalaxias	06-Jun-2005
Scaturiginichthys vermeilpinnis	Redfin Blue Eye, Redfin Blue-eye	16-Jul-2000
Zearaja maugeana	Maugean Skate, Port Davey Skate	4-Mar-2004



EPBC Act List of Threatened Fauna

Fishes that are endangered (17 EPBC species)

<i>Brachiopsilus ziebelli</i>	Ziebell's Handfish, Waterfall Bay Handfish	16-Jul-2000
<i>Carcharias taurus</i> (west coast population)	Grey nurse shark (west coast population)	16-Oct -2001
<i>Carcharodon carcharias</i>	White Shark, Great White Shark	16-Jul-2000
<i>Chlamydogobius squamigenus</i>	Edgbaston Goby	16-Jul-2000
<i>Epinephelus daemeli</i>	Black Rockcod, Black Cod, Saddled Rockcod	04-Apr-2012
<i>Galaxias parvus</i>	Swamp Galaxias	24-Nov-2006
<i>Galaxias tanycephalus</i>	Saddled Galaxias	16-Jul-2000
<i>Galaxiella pusilla</i>	Eastern Dwarf Galaxias, Dwarf Galaxias	16-Jul-2000
<i>Maccullochella peelii</i>	Murray Cod	03-Jul-2003
<i>Milyeringa veritas</i>	Blind Gudgeon	16-Jul-2000
<i>Mogurnda clivicola</i>	Flinders Ranges Mogurnda, Flinders Ranges Purple-spotted Gudgeon	16-Jul-2000
<i>Nannatherina balstoni</i>	Balston's Pygmy Perch	24-Nov-2006
<i>Nannoperca obscura</i>	Yarra Pygmy Perch	16-Jul-2000
<i>Nannooperca variegata</i>	Vari ated Pygmy Perch, Ewens Pygmy Perch, Golden Pygmy Perch	16-Jul-2000
<i>Neoceratodus forsteri</i>	Australian Lungfish, Queensland Lungfish	06-Aug-2003
<i>Ophistemon candidum</i>	Blind Cave Eel	16-Jul-2000
<i>Paragalaxias dissimilis</i>	Shannon Paragalaxias	24-Nov-2006
<i>Paragalaxias eleotroides</i>	Great Lake Paragalaxias	24-Nov-2006
<i>Pristis clavate</i>	Dwarf Sawfish, Queensland Sawfish	20-Oct-2009
<i>Pristis pristis</i>	Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish	16-Jul-2000
<i>Pristis zijsron</i>	Green Sawfish, Dindagubba, Narrowsnout Sawfish	07-Mar-2008
<i>Prototroctes maraena</i>	Australian Grayling	16-Jul-2000
<i>Pseudomugil mellis</i>	Honey Blue-eye	16-Jul-2000
<i>Rhincodon typus</i>	Whale Shark	16-Oct-2001

Fishes that are Conservation Dependent (8 EPBC species)

<i>Centrophorus harrissoni</i>	Harrisson's Dogfish, Endeavour Dogfish, Dumb Gulper Shark, Harrison's Deepsea Dogfish	14-Jun-2013
<i>Centrophorus zeehaani</i>	Southern Dogfish, Endeavour Dogfish, Little Gulper Shark	14-Jun-2013
<i>Galeorhinus galeus</i>	School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark	22-Jan-2009
<i>Hoplostethus atlanticus</i>	Orange Roughy, Deep-sea Perch, Red Roughy	05-Dec-2006
Australian <i>Rexia solandri</i> (eastern population)	Eastern Gemfish	22-Jan-2009
<i>Seriolella brama</i>	Blue Warehou	14-Feb-2015
<i>Sphyrna lewini</i>	Scalloped Hammerhead	15-Mar-2018
<i>Thunnus maccoyii</i>	Southern Bluefin Tuna	15-Dec-2010



Save Our Seas

Dear teachers and students,

We hope you enjoyed your excursion to SEA LIFE Aquarium for our Conservation program. We hope you are inspired by our animals to work towards a more sustainable future for our seas. We have listed 10 actions that you can take to help preserve sea life.

From the SEA LIFE education team

Ten Easy Steps to SAVE OUR SEAS!

- 1.** Reduce climate change and carbon emissions: Walk or ride a bike instead of driving, turn off lights and electronics when you're not using them. Sign school up for Walk To School and be rewarded for every step you take! <https://education.nsw.gov.au/teaching-and-learning/curriculum/road-safety-education/safe-travel/walking> <https://www.walktoschool.vic.gov.au/>
- 2.** Choose sustainable seafood: Download the Marine Stewardship Council (MSC) app and use it when shopping for fish, or look for the MSC logo on packaging to be sure it is sustainable. <https://www.sustainableseafood.org.au/>
- 3.** Choose souvenirs carefully: before buying animal products, consider where these animals came from. Avoid products made from shells, coral, sea stars and seahorses. Only purchase farmed crocodile products.
- 4.** Use less plastic: Use a reusable drink bottle and plastic containers, avoid plastic wrap, plastic bags, straws and coffee cups.
- 5.** Use the bins: Never litter and recycle whenever possible. Organise 'Tidy School' or 'Waste Free Lunch' days to encourage the whole school to participate. <http://kab.org.au/eco-schools/> <https://healthy-kids.com.au/waste-free-lunch/>
- 6.** Don't release balloons; blow bubbles instead: Take the pledge at <https://balloonsblow.org/>
- 7.** Tread carefully in marine environments: Be careful not to step on plants when exploring dunes and explore rock pools without disturbing the animals that live there. When swimming or snorkelling with coral be careful not to touch or kick it with fins.
- 8.** Choose pets responsibly: Marine fish are often difficult to care for and should not be taken from the wild. Choose fish that are bred in captivity and that you are confident in taking care of properly. Never release pets back into the wild.
- 9.** Reduce and reuse paper: so that fewer trees are being cut down. Try your best to use both sides of every piece of paper and always recycle paper or cardboard wastes. <https://www.sustainability.vic.gov.au/schools>
- 10.** Learn more about our amazing sea life: and share your knowledge with others! Help us spread the message! We would love to hear about how your students or school community is taking action to protect our wild areas.

Please email us at

education@sydneyaquarium.com.au education@melbourneaquarium.com.au with your stories and photos so we can inspire more classes to take action. We are also always happy to answer any questions you have after your visit, and would love to hear your feedback from the day.

Thank You!